
ऊन टॉप की बारीकी श्रेणियाँ
(दूसरा पुनरीक्षण)

Fineness Grades of Wool Tops
(Second Revision)

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FOREWORD

This Indian Standard (Second Revision) was adopted by the Bureau of Indian Standards, after the draft finalized by the Wool, Wool Products and Textile Floor Coverings Sectional Committee had been approved by the Textiles Division Council.

It is sometimes very difficult to correctly determine the fineness of wool top on the basis of fibres taken out from the yarn/fabric which has undergone processing during spinning, weaving and finishing.

Due to wide variation in the fineness parameters of imported wool and indigenous wool, the fineness values of these have been specified separately. Further, the grades finer than 48s have not been specified for indigenous wool as the same are not yet available on a commercial scale.

The terms 'grade' as used in this standard, should not be confused with the terms 'quality' and 'type'. 'quality' is a term that includes not only fineness but also characteristics, such as length, character, strength, elasticity, luster and colour, all of which affect the spinnability of wool and the properties of the yarn and fabric produced from the wool. 'type' is a term designating a particular combination of characteristics appropriate to a specific use of descriptive of geographic origin, breed of sheep or preparation for market. Further, the Bradford designations which use the same grade designations, for example, 54 s and 50 s, as are used in this standard, refer to the quality and not only to fineness.

This standard was published in 1970. The first revision of this standard was undertaken to modify the specifications of wool tops processed out of indigenous wool in respect of average fibre diameter and the fibre diameter distribution. The confidence limit of the average fibre diameter was also amended in this revision. The present revision has been made in the light of experience gained since last revision and to bring the standard in latest format and to update the referred standards.

The composition of the Committee responsible for the formulation of this standard is listed in Annex A.

In reporting the results of a test or analysis made in accordance with this standard, if the final value, observed or calculated, is to be rounded off, it shall be done in accordance with IS 2 : 2022 'Rules for rounding off numerical values (*second revision*)'.

Indian Standard

FINENESS GRADES OF WOOL TOPS

(*Second Revision*)

1 SCOPE

1.1 This standard covers the classification of fineness grades of the fibres in wool tops.

1.2 This standard is also applicable to wool yarns and fabrics processed on the worsted system. However, the test results obtained on the wool fibres removed from yarns and fabrics may not meet the specifications as given in the standard which are for wool tops. If these meet the specifications of next coarser grade, the same shall be considered as satisfying the grade for the purpose of grading of fibres in corresponding tops.

2 REFERENCES

The following standards contain provisions which, through reference in this text, constitute provisions of this standard. At the time of publication, the editions indicated were valid. All standards are subject to revision and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent editions of the standards listed below.

<i>IS No.</i>	<i>Title</i>
IS 744 : 2000	Textiles — Methods for determination of wool fibre diameter, percentage of medullated fibres and kemp fibre (<i>third revision</i>)

3 TERMINOLOGY

For the purpose of this standard, grade shall be a descriptive term used in rating of wool tops based on fineness, that is, average diameter and variation (dispersion) of fibre diameter (or fibre width).

4 GRADES

The specifications for various grades of wool tops

made from imported and indigenous wools are given in Table 1.

5 METHOD OF TEST

5.1 Determine the diameter of wool fibres by the method given in IS 744. The number of observations to be made for this purpose shall be such as to obtain confidence limits of the mean within $\pm 1.0 \mu\text{m}$ at a probability level of 95 percent.

NOTE — The number of fibres to be observed in order to attain the above stated confidence limits of the mean shall be determined by the following formula, which, however, shall not exceed 1 000.

$$n = \left(\frac{t \sigma}{E} \right)^2$$

where

n = number of fibres;

t = probability factor (1.96 for 95 percent probability level);

σ = standard deviation of fibre diameter; and

E = desired precision of the mean, that is $\pm \mu\text{m}$.

5.2 Calculate the average fibre diameter and also determine the fibre diameter distribution.

6 ASSIGNMENT OF GRADE

6.1 Compare the average fibre diameter and fibre diameter distribution as determined in 5.2, with the specifications given in Table 1. Assign to the wool top the grade that corresponds to the observed average fibre diameter and fibre diameter distribution. If the measured average fibre diameter and fibre diameter distribution correspond to a single grade, assign that grade to the top. If the fibre diameter distribution does not meet the requirement for the grade to which the average fibre diameter corresponds, assign to the wool top a dual grade, the second being next coarser than the grade to which the average fibre diameter corresponds.

6.1.1 A few examples illustrating the assignment of grade are given below:

Imported Wool Tops

Example 1:

Average fibre diameter	30.5 μm
Fibre diameter distribution, percent:	
30 μm and under	48
30.1 μm and over	52
50.1 μm and over	2
Assigned grade	50s

Example 2:

Average fibre diameter	30.5 μm
Fibre diameter distribution, percent:	
30 μm and under	42
30.1 μm and over	58
50.1 μm and over	3
Assigned grade	50s/48s

Indigenous Wool Tops

Example 3:

Average fibre diameter	34.5 μm
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Fibre diameter distribution, percent:

40 μm and under	72
40.1 μm and over	28
60.1 μm and over	5
Assigned grade	48s

Example 4:

Average fibre diameter	34.5 μm
Fibre diameter distribution, percent:	
40 μm and under	63
40.1 μm and over	37
60.1 μm and over	6
Assigned grade	48s/44s

Example 5:

Average fibre diameter	39.5 μm
Fibre diameter distribution, percent:	
40 μm and under	54
40.1 μm and over	46
60.1 μm and over	7
Assigned grade	40s

Table 1 Specifications for Grades of Wool Tops
(Clauses 4.1 and 6.1)

Sl No.	CHARACTERISTIC	IMPORTED WOOL TOPS																INDIGENOUS WOOL TOPS				
		Finer than 80s	80s	70s	64s	62s	60s	58s	56s	54s	50s	48s	46s	44s	40s	36s	Coarser Than 36s	48s	44s	40s	36s	Coarser Than 36s
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)
i)	Average fibre diameter range, μm :																					
	Lower limit	-	18.10	19.60	21.10	22.60	24.10	25.60	27.10	28.60	30.10	31.80	33.50	35.20	37.10	39.00	41.30	-	36.01	38.11	40.21	42.21
	Upper limit	18.09	19.59	21.09	22.59	24.09	25.59	27.09	28.59	30.09	31.79	33.49	35.19	37.09	38.99	41.29	-	36.00	38.10	40.20	42.20	-
ii)	Fibre diameter distribution, percent:																					
	25 μm and under, <i>Min</i>	95	91	83	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	30 μm and under, <i>Min</i>	-	-	-	92	86	80	72	62	54	44	-	-	-	-	-	-	-	-	-	-	-
	40 μm and under, <i>Min</i>	-	-	-	-	-	-	-	-	-	-	75	68	62	54	44	-	70	60	50	40	-
	25.1 μm and over, <i>Max</i>	5	9	17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	30.1 μm and over, <i>Max</i>	1	1	3	8	14	20	28	38	46	56	-	-	-	-	-	-	-	-	-	-	-
	40.1 μm and over, <i>Max</i>	-	-	-	1	1.5	2	-	-	-	-	25	32	38	46	56	-	30	40	50	60	-
	50.1 μm and over, <i>Max</i>	-	-	-	-	-	-	1	1	2	2	-	-	-	-	-	-	-	-	-	-	-
	60.1 μm and over, <i>Max</i>	-	-	-	-	-	-	-	-	-	-	1	1	2	3	4	-	6	8	10	12	-

ANNEX A
(Foreword)

COMMITTEE COMPOSITION

Wool, Wool Products and Textile Floor Coverings Sectional Committee, TXD 04

<i>Organization</i>	<i>Representative(s)</i>
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